DOCUMENT RESUME

ED 458 641 CS 510 654

AUTHOR St. John, Edward P.; Manset, Genevieve; Chung, Choong-Geun; Worthington, Kimberly

TITLE Assessing the Rationales for Educational Reforms: A Test of the Professional Development, Comprehensive Reform, and Direct Instruction Hypotheses. Policy Research Report.

INSTITUTION Indiana Univ., Bloomington. Education Policy Center.
SPONS AGENCY Indiana State Dept. of Education, Indianapolis.
REPORT NO RR-01-03
PUB DATE 2001-09-00
NOTE 40p.
AVAILABLE FROM Indiana Education Policy Center, Smith Center for Research in Education, Suite 170, 2805 E. 10th St., Indiana University, Bloomington, IN 47408-2698. Tel: 812-855-1240; Web site: http://www.indiana.edu/~iepc/.
PUB TYPE Information Analyses (070)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Early Intervention; *Educational Change; Primary Education; *Professional Development; *Program Effectiveness; *Reading Instruction; *Remedial Reading
IDENTIFIERS *Direct Instruction; Even Start; Four Blocks Approach; Reading Recovery Projects

ABSTRACT

Educational reforms are advocated based on rationales that emerge from the research literature. However, evaluation studies seldom examine whether the rationales used to argue for a reform actually hold up when empirical evidence is examined after the reform has been implemented. This paper examines survey data from 3 years of analyses of early reading interventions to examine 3 of the rationales that were used to argue for the program. First, there was evidence to support the argument that teachers need time to collaborate about improving educational outcomes. This study found that 2 years of funding for early reading reforms (Reading Recovery, Success for All, Literacy Collaborative, full day kindergarten, First Steps, Even Start, Accelerated Schools Project, and Four Blocks) provided a margin of difference for collaborative efforts among teachers to promote reading related outcomes. Second, the argument that comprehensive reform strategies promote gains in student outcomes was supported, but not all reform models had their intended effects. Finally, there was no evidence from this study that the direct/explicit approach to reading instruction improved student outcomes, although this claim merits more systematic study in the future. (Contains 56 references, 7 notes, and 6 tables of data.) (Author/RS)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 458 641

Assessing the Rationales for Educational Reforms: A Test of the Professional Development, Comprehensive Reform, and Direct Instruction Hypotheses

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

M. McCarthy

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U S DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Policy Research Report

Indiana Education Policy Center
Smith Center for Research, Suite 170
2805 E. 10th Street
Bloomington, IN 47408-2698
Phone: (812) 855-1240
Fax: (812) 855-0240
Web site: http://www.indiana.edu/~iepc

2

BEST COPY AVAILABLE

CS 510 654

Assessing the Rationales for Educational Reforms: A Test of the Professional Development, Comprehensive Reform, and Direct Instruction Hypotheses

By
Edward P. St. John
Genevieve Manset
Choong-Geun Chung
Kimberly Worthington

Indiana Education Policy Center
Indiana University

September 2001
Policy Research Report #01-03

Acknowledgments: The research reported herein was completed with the support of the Indiana Department of Education, State of Indiana. The interpretations in this paper are the authors and do not necessarily represent policies, positions, or views of the Indiana Department of Education any other agency of the State of Indiana.

Assessing the Rationales for Educational Reforms: A Test of the Professional Development, Comprehensive Reform, and Direct Instruction Hypotheses

Abstract

Educational reforms are advocated based on rationales that emerge from the research literature. However, evaluation studies seldom examine whether the rationales used to argue for a reform actually hold up when empirical evidence is examined after the reform has been implemented. This paper examines survey data from three years of analyses of early reading interventions to examine three of the rationales that were used to argue for the program. First, there was evidence to support the argument that teachers need time to collaborate about improving educational outcomes. This study found that two years of funding for early reading reforms provided a margin of difference for collaborative efforts among teachers to promote reading related outcomes. Second, the argument that comprehensive reform strategies promote gains in student outcomes was also supported, but not all reform models had their intended effects. Finally, there was no evidence from this study that the direct/explicit approach to reading instruction improved student outcomes, although this claim merits more systematic study in the future.

Introduction

Educational reform in the United States is at an interesting, but perplexing, point in its evolution. The current wave of school reform is, in theory at least, research-based, which provides an opportunity for educational researchers, and perhaps even educators, to test new approaches. Recent developments in reading and comprehensive reform provide teachers—and their schools—with a range of choices about the types of reform strategies they may want to undertake. However, there is a long history of failure of education reforms, especially in urban schools (Miron & St. John, in press), which complicates efforts to develop policies and strategies to guide the choices educators might make about reform strategies. Different and potentially competing rationales have been used to argue to the new wave of reading and comprehensive reforms. This complicates efforts to evaluate the impact of education reforms.

Three arguments about reform seem to have a substantial influence on the way recent reading and comprehensive reforms have been conceptualized within state and federal programs, implemented by states and schools, and evaluated. One of these paradigms is that professional development, especially providing opportunities for educators to collaborate in schools, can foster improvement in educational outcomes (Bull & Buechler, 1996; Education Commission of the State, 1997; Guskey & Sparks, 1997). A second is that comprehensive models that engage teachers in cohesive reform strategies increase the chances more students will succeed (e.g., Clay, 1993; Taylor, Anderson, Au, & Jaffy, 2000). A third is that direct, explicit instruction in letter/sound relationships is necessary to foster reading by third grade, a strategy that is essential to move more children into the educational mainstream (Foorman, Fletcher, Francis, & Schatschneider, 2000; Snow, Griffith, & Burns, 1998).

While these rationales are actually comprised of micro sets of competing reform arguments, each of the rationales is used by a general belief community. For example, while there may be substantial disagreements about philosophies and strategies among the advocates for comprehensive reforms (e.g.. Success for All and Accelerated Schools), they are in a coalition of advocates for comprehensive reform. Also, with reading reform, there are long-standing disputes about direct instruction, but many reforms aligned with a

literature-rich philosophy (e.g., Reading Recovery) benefit from the new advocacy for direct instruction, which has influenced new state and federal investments in reading reform. Thus, all three rationales influence state and federal reform efforts. Indeed, all three rationales have been used in states to promote early reading reform.

Once beliefs reach the point of having pervasive influence on the rationales used for education policy development, the underlying claims may move along unexamined by educators, evaluators, and policymakers. This paper treats these rationales as "hypotheses" and uses the analyses of surveys of early reading programs in Indiana's elementary schools to test these hypotheses. We describe the three hypotheses, present the study approach used to collect and analyze results, discuss the statistical analyses, reconsider the hypotheses in relation to the empirical evidence, and summarize by considering the implications of the study for research and educational policy.

Competing Reform Hypotheses

While it is widely recognized that competing theories, or hypotheses, guide reform efforts, researchers seldom investigate competing rationales for reform. To achieve this goal, it is necessary to discern the assumptions made by the reform advocates, as well as to analyze data that permits an objective testing of these assumptions. This is a complicated task because most of the research on reading reforms holds implicit advocacy positions. Thus, not only is it difficult to conceptualize research in ways that make it possible to assess different assumptions about reform, but it can be even more difficult to find data that can be used to test these assumptions.

Instead of testing the rationales for reforms, most researchers conduct confirmatory research related to a specific reform model. By testing a single hypothesis rather than examining empirical evidence in relation to competing hypotheses, researchers eventually play the role of providing confirmatory evidence for individual reformers. However, the claims made as part of the rationale for funding often go untested. To examine the effects of rationales, we must start by examining the political arguments that influence the evolution of a funding program.

This study examines the impact of a state early reading reform program on three school outcomes (special education referral for grades K-3, retention rates for grades K-3,

and pass rates on the state 3rd grade reading achievement test). Three different rationales for education reform influenced the evolution of this state grant program. This paper examines three years of surveys from schools funded in the Indiana Early Intervention Grant Program (EIGP), along with surveys from comparison schools. Below we outline the three arguments and consider how these arguments influenced the EIGP.

Professional Development

The professional development hypothesis essentially is that teachers need time for professional development that involves collaboration on strategies for improving educational outcomes. In the middle 1990s, the Indiana Department of Education (IDOE) initiated efforts to support professional development for teachers. Initially, they studied state policies on professional development, focusing on release time for teachers in various states (Bull, Buechler, Didley, & Krehbiel, 1994). The IDOE has continued to advocate for subsidizing release time for teachers' professional development. As a second phase of their advocacy process, the IDOE commissioned a study of the research base for professional development. This study found that "successful" professional development is:

- School-based, that is, focused on particular problems of each school and selected by the teachers and principal to help address those problems.
- Followed up in teachers' classrooms by such means as peer coaching or school-based research and evaluation teams.
- Collaborative, so that groups of professionals at schools can work together to solve the school problems most critical to student learning.
- Embedded in the daily lives of teachers, so that they undertake professional growth as a central responsibility of teaching.
- Focused on student learning, so that teams of teachers at the school attend to the actual effects of professional development on the performance of the students for whom they are responsible. (Bull & Buechler, 1996, p. 5).

These principles have been widely disseminated in Indiana and nationally. In Indiana, the IDOE strongly encourages schools to consider these principles whenever they submit proposals for categorical funds (St. John, Ward, & Laine, 1999). Therefore

the professional development rationale was embedded in the program and was integral to the funding process in EIGP. To receive a grant, a school either received a subsidy for professional development in Reading Recovery, or needed to include a focus on professional development (consistent with the principles above) in their grant application.

Unfortunately, few conceptual frameworks have been developed for the analysis of the effects of professional development on student outcomes. These conceptual models argue that professional development has a direct influence on professional practices and influences student outcomes as a result of changes in educational practice outcomes (Guskey & Sparks, 1997; St. John, Ward, & Laine, 1999). This conceptualization is consistent with the principles outlined above and thus had an influence on the conceptual model for this study. We included an explicit examination of professional development activities as part of our surveys.

Comprehensive Reform

A second reform hypothesis is that comprehensive and cohesive reform approaches are essential to improving schools' outcomes. In the debates over reading intervention strategies, Barbara Taylor and her colleagues (Taylor, Anderson, Au, & Taffy, 2000) have argued this position. In recent years, the comprehensive reform argument has also had a substantial influence on the Comprehensive School Restructuring Demonstration and schoolwide Title I (Wong, in press). This reform argument had a substantial influence on EIGP in Indiana. In particular, advocates of the Reading Recovery program influenced the creation of EIGP in Indiana. Reading Recovery was made the first priority for funding. Over time, about half of the funds were used for Reading Recovery and about half for other programs.

In addition to the EIGP funding, the schools in Indiana had access to other types of funding from other state and federal sources, so it was possible that comparison schools included in these surveys had similar reforms funded by alternative programs. Therefore it was necessary to review the features of diverse reform models before we could develop a survey that could be used to analyze the effects of the different types of reform models that schools might use. The reforms that are represented in the current study are described briefly below.

Reading Recovery: A pullout, one-on-one reading intervention for the lowest-achieving students in first grade (i.e., the lowest 20%). Reading Recovery (RR) is designed to bring those students up to grade level. The intervention helps children make the difficult transition from decoding to comprehension. The program has been widely studied by proponents and independent researchers (e.g., Center, Wheldall, Freeman, Outhred, & McNaught, 1995; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994; Iverson & Tunmer, 1993; Rowe, 1997).

Success for All: A comprehensive school restructuring process designed for schools with large populations at risk for learning failure. Success for All (SFA) balances a skills-oriented instructional approach with a heavy emphasis on collaboration and teamwork among educators. The program has a substantial research base (Dianda & Flaherty, 1995; Madden, Slavin, Karweit, Donlan, & Wasik, 1991; Madden, Slavin, Karweit, Limermon, & Donlan, 1989; Ross & Smith, 1994) mostly conducted by advocates for SFA.

Literacy Collaborative: A schoolwide restructuring model that focuses on classroom-based instruction, depending on Reading Recovery as a "safety net" for those students still not succeeding. Developed by the Reading Recovery program at Ohio State, the Literacy Collaborative (LC) provides support for students who are not receiving RR. LC involves the whole school—especially teachers and families—in a comprehensive and reflective approach to literacy instruction, which is appropriate for all children. This program is relatively new and lacks a confirmatory research base.

Full-Day Kindergarten: Full-day kindergarten (FDK) is not funded by the state of Indiana as part of the state formula. Based on research-based models (e.g., Elicker & Mathur, 1997; Humphrey, 1988; Sheehan, Cryan, Wiechel, & Bandy, 1991), EIGP funded FDK programs that provided enhanced approaches to literacy and math.

First Steps: A classroom-based language development model that serves as a teacher resource for closing the loop between diagnostic observation of child development and classroom instruction. First Steps provides teaching strategies, specific outcomes, and parent involvement ideas for each stage of child development. The research base is modest and mostly descriptive (Australian Council for Educational Research, 1993a, 1993b; Deschamp, 1995).

Even Start: An early intervention program that aims to help break the poverty cycle by improving educational opportunities for low-income families. Even Start is not intended to affect early reading directly, but to create a developmentally appropriate home environment. A few federal studies have assessed the effects of the program, indicating it helps students make normal educational progress (e.g., Connor-Tadros, 1996; Gamse, Conger, Elson, & McCarthy, 1997).

Accelerated Schools Project: A schoolwide reform model, Accelerated Schools Project (ASP) is based on the notion that students in at-risk situations can learn at an accelerated pace by offering enriched curricula and instruction similar to that used for gifted education. ASP was designed as an inquiry-based professional development model with a clearly articulated philosophical base, which encourages active and reflective experimentation and evaluation. The program has a substantial research base (e.g., Finnan, St. John, Slovacek, & McCarthy, 1996), but the research that considers student outcomes is limited (e.g., Knight & Stallings, 1995; McCarthy & Still, 1993).

Four Blocks: Multi-level, multi-method instruction provided in a framework that provides an organized, systematic structure for providing early literacy instruction. The four "blocks" of the program are: guided reading, self-selected reading, writing, and working with words. The model was proposed by Cunningham (1991) and has a modest research base (Cunningham, Hall, & Defee, 1991, 1998) conducted by the model advocates.

Direct Phonics Instruction

The third reform hypothesis is that direct instruction in letter/sound relationships (i.e., direct phonics instruction) can improve early reading acquisition. The most influential study on phonological awareness and the alphabetic principle is by Barbara Foorman and her colleagues (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998), a study that was independent of specific reform models. Recently, in response to critics, Foorman and her colleagues summarized their argument:

> However, we do maintain that there are some instruction principles that teachers and schools can use to enhance the reading achievement of at-risk children, and that it makes

> sense to demonstrate effective implementation of these instructional principles before investing in more complex solutions. (Foorman, et al., 2000, p. 27)

Thus, while Foorman and her colleagues do not overtly argue against taking comprehensive approaches to early reading improvement, they do argue for a specific method as a first priority. This argument was based on research that found:

> Controlling for differences in age, ethnicity, and verbal IQ, we found that children in the direct code (DC) approach improved in word reading at a faster rate and had higher word recognition skills in April than children receiving the implicit code (IC) approach (either research-based IC or district's standard IC). More importantly, children in *all* instructional groups with higher phonological processing scores in the beginning of the year demonstrated improvement across the year. (Foorman, Fletcher, Francis, & Schatschneider, 2000, p. 29)

Thus, this argument rests on research that shows that students who have instruction in direct coding learn to read words faster and that students who have skills in phonological processes learned to read faster. Some states have actually required phonics instruction in teacher education based on this line of research. The Snow report (Snow, et al., 1998) concludes that schools should first emphasize direct instructional approaches. However, it is not clear whether the particular reform models they advocated (e.g., Success for All) actually influenced schools to place more emphasis on direct instruction. Several states—including Texas, Washington, California, New York and Wisconsin—have required direct phonics instruction (Allington & Woodson-Jiron, 1998; Taylor, et al., 2000). This approach to policy takes the claim made by Foorman, et al. (1998) quite literally. That is, these researchers essentially claim that direct phonics instruction is a necessary first step and legislators in these states have taken action requiring this instructional approach. The implicit political claim made in this approach is that requiring all schools to use an explicit approach to phonics instruction will increase the number of students who learn to read and make normal educational progress.

These arguments have had an influence on the evolution of the EIGP in Indiana in the sense that direct instruction is widely advocated. Many schools in Indiana used direct approaches in their early reading instruction. Further, the survey instrument developed for this study allowed us to measure the extent to which schools were using direct

instruction and related classroom practices. Thus it was possible to test the direct instruction hypothesis.

Testing Hypotheses

The EIGP was implemented in fall 1997 and has been funded for the past four years. The program was funded by the state at $4 million per year during the three years examined in this study. Three years of surveys (1997-98, 1998-99, and 1999-2000) were conducted of schools funded by EIGP along with a random sample of schools that did not receive funding. The surveys asked questions about actual classroom practices in both sets of schools and provided sufficient data to examine the effects of the three approaches to educational improvement on:

- Two outcomes related to attainment/equity (rates of special education referral and retention in grades 1-3); and
- One outcome related to achievement (the percentage of third grade students passing the state reading test, ISTEP+, in the fall term after the intervention).

Specifically we examined the effects of school characteristics, funding, type of intervention, professional development features, parent involvement features, and classroom practices (factor scores) on these outcomes. A factor that combined practices related to direct instruction was included in the regression models. These analyses provided a relatively comprehensive assessment of the impact of these reform models, which are examples of comprehensive reforms. Further, since the survey instrument asked questions about professional development and direct instruction, it was possible to analyze information related to all three hypotheses.

Research Approach

In this study we use three years of survey data on schools in Indiana, collected as part of a comprehensive evaluation of the Early Intervention Program in Indiana. Below we describe the survey we used, the logical model used in the study, and the instruction and related factors developed from the study of the entire three-year database.

Survey and Response

The survey instrument, the Early Literacy Intervention Survey,[1] included questions about the school, types of interventions used, the features of the early reading program, the number of students referred and retained, and enrollment information that could be used to impute special education referral and retention rates. In addition, we had access to a state-level database with information on test scores.

The survey assessed the frequency of use of nine organizational and structural features (ability grouping, basal readers, child-initiated learning centers, independent reading, one-on-one tutorials, pullout instruction, small groups, systematic evaluation, and trade books). It also assessed the frequency of use of ten classroom instructional methods (Big Books, cooperative learning, creative writing and/or essays, drama, emergent spelling, paired reading, phonics, reading aloud, reading drills, and worksheets/workbooks). For these frequency-of-use questions, survey participants were asked to respond on a five point scale for the extent of use from 1 for "never" to 5 for "every day" for both the current year and the prior year by grade level (K, 1, 2, 3). The survey also asked whether five types of professional development processes (certified training, certified specialist, in-service workshops, networking, and opportunity for collaboration) and five features related to parent involvement (book distribution, family literacy, paired reading, parent conference, and parent volunteers) were used in kindergarten through grade three.

This study reports analyses for three years of surveys of funded and comparison schools. The overall response rate across the three years was 61%. Comparison schools were half as likely to be surveyed as funded schools. Therefore comparison schools were weighted by 2, to adjust for the probability of being surveyed.

Statistical Methods

The study used descriptive statistics, factor analysis, and multiple regression. The descriptive statistics describe the population characteristics.

---

[1] Copies of the survey can be obtained on request from the Indiana Education Policy Center. A simplified version of the instrument that can be used to survey teachers is available on line (St. John, & Bardzell, 1999).

A factor analysis was run for 19 variables related to instructional and classroom program features for the entire population. Specifically, the average Likert score for grades 1-3 was imputed for the 19 program features for instruction and structural/organization features of the survey instrument. A conservative factor-loading minimum of .50 was used. Missing items were replaced with mean values.

Ordinary least squares (OLS) regression was used to examine the influence of predictor variables on the three outcomes. We present R^2, plus three levels of significance (.01, .05, and .10) for each predictor variable. Since .10 is only a moderately significant association, we make note of this moderate association in the text, so the reader will not place undue emphasis on this statistical relationship.

Model Specifications

A multiple regression model was developed to assess the effects of school characteristics, intervention type, professional development and instruction, and related factors on three outcomes: special education referral rates for grades K-3, retention rates for grades K-3, and passing rates of third grade ISTEP+ reading. The analyses for the first two outcomes (i.e., referral and retention rates) considered three years of surveys. The analysis for one outcome (i.e., test pass rates) considered two years of surveys. The blocks of variables, added sequentially, were:

- *School Characteristics*: Whether a school was funded, the average ISTEP+ score, the percentage of students receiving free or reduced lunch, the percentage of minority students, and school locale (urban and rural schools were compared to students in other locale types).
- *Intervention Type*: Reading Recovery[2], Success for All, Literacy Collaborative, full-day kindergarten, First Steps, Even Start, Accelerated Schools[3], and Four Blocks were coded as dichotomous variables. Some schools had more than one of these reform models.

[2] This variable coding included schools with Reading Recovery whether or not they were funded through EIGP.

[3] The EIGP did not fund any Accelerated Schools, but this intervention type was discussed in documents disseminated through the program (St. John & Bardzell, 1999) and there were a few Accelerated Schools in the state.

- *Professional Development:* Whether reading teachers are required to be certified, whether certified specialists are brought in for training sessions, whether in-service workshops were used, whether teachers networked with teachers in other schools, and whether teachers collaborated within the school on reading instruction are included in professional development.
- *Parent Involvement:* Book distribution, family literacy, paired reading (parent to child), parent conferences, and parent volunteers were included as dichotomous variables.
- *Instruction and Related Factors:* We included the scores for the nine structural/organizational factors and the ten classroom instructional methods.

Instructional and Related Factors

Because of the large number of program features related to instruction and the organization of reading programs at the grade level, we decided to conduct a factor analysis of the instructional and structural/organizational features. (The factor analysis is presented in St. John, et al., 2000).

- *The Connected-Text Approaches* factor includes independent reading, cooperative learning, creative writing, emergent spelling, paired reading (student-to-student), and reading aloud. Schools that make use of these methods combine techniques that engage students in the learning process.
- *The Direct/Explicit Approaches* factor combines basal readers, phonics instruction, reading drills, and worksheets/workbooks. Schools that use Direct/Explicit Approaches emphasize systematic approaches to teaching the components of language and reading.
- *The Child-Centered/Expressive Approaches* factor includes child-initiated learning centers, Big Books, cooperative learning, and drama. These instructional approaches place an emphasis on the development of the whole child and peer engagement among children.
- *The Small Group/Tutorial Approaches* factor combines ability grouping, one-on-one tutoring, pullout instruction, and small groups. Schools that use these

techniques place more emphasis on classifying children and accelerating the learning of some, while addressing developmental needs of others.

- *The Trade-Books Approaches* factor combines trade books and Big Books, but de-emphasizes basal readers. In this approach, schools use texts that are literature-based and engaging for students, rather than structured elements of reading programs that emphasize increasing levels of difficulty.

Of these factors, the variables included in the Direct/Explicit Approaches factor are closely aligned with the direct approaches advocated by Foorman and colleagues (Foorman, et al., 1998; Foorman, et al., 2000). The other factors would seem more closely aligned with the more comprehensive approaches advocated by Taylor and other reform advocates.

Limitations

This study has a few limitations that merit consideration by readers. First, our analyses consider school-related outcomes rather than individual outcomes. While most reading research focuses on individual students, we felt it was important for the funding agency to understand whether their funding influenced student outcomes at the school level. This approach is consistent with the ways school outcomes are frequently reported to legislators and the public. Thus, this approach was appropriate for a policy study of this type.

Second, the survey asked respondents to answer questions about program features for all grade levels, rather than asking each teacher to respond to a questionnaire. We considered this approach appropriate for this initial test of the study methodology. In the future we plan to extend the method to include a survey of teachers, which would mean we could examine both school level and classroom level outcomes.

Third, we assumed the schools that responded to the survey were representative of all of the schools in the funded and comparison groups. This assumption was necessary because of the statistical methods, but it seems a reasonable assumption for this study population. While funded schools and comparison schools had different response rates, these differences seem reasonable given that funded schools had more motivation to respond as a result of their involvement in the program.

Fourth, while many of the comparison schools in Indiana used direct instruction methods, the funded interventions did not place a substantial emphasis on these practices, an issue considered below. In the summer of 2000, the IDOE provided statewide training, developed a web page, and developed web-based courses (for continuing education courses) that emphasized direct instruction. In the next study it may be possible to further test this hypothesis.

Findings

Sample Characteristics

The characteristics of the Indiana schools included in this study are presented in Table 1. The three outcomes provide very different measures of school success. The average rates for special-education referral (5%) and grade-level retention (2%) were relatively low. In contrast, an average of 69% passed the ISTEP+ reading/language arts test.

The schools in this study represent a great diversity in school characteristics. The responding schools had an average of 26% of free and reduced lunch and an average of 13% minority students. About two-tenths were from city locales (18.5%) and about one-third rural (31.9%). The other half were located in suburban and town locales. In addition, about one-third of the sample received one year of funding (32%) and 11.3% received two years of funding, with very few schools receiving funding all three years.

Three types of interventions represented the majority of comprehensive interventions: Reading Recovery (40.8%), full-day kindergarten (12.3%), and Four Blocks (12.5%). These methods were being encouraged by the IDOE through different initiatives during the period of the study. Local political forces influenced the number of schools that applied for state funds to implement these methods.[4] Much smaller percentages of the schools used Success for All, Literacy Collaborative, and other methods. However, this list of reforms does not correspond perfectly with receipt of funds. For example, not all Accelerated Schools received funding through the EIGP.

Most schools in the sample used in-service workshops (77%), networking (66.1%), and collaboration (73.5%). Certified training and certified specialists,

[4] These approaches were formally encouraged by the Indiana Department of Education.

professional development methods linked to Reading Recovery in Indiana, were used in about one third of the schools in the sample.

Parent involvement was widely used as a strategy in early reading programs. About half of the schools used book distribution. Most used parent conferences, parent volunteers, and paired (parent-to-child) reading. About one-third had family literacy programs.

Referral Rates

The analysis of referral rates, represented as a sequential set of regression models (Table 2), reveals that all but one of the variables that were significantly associated with special education referral had a consistent effect across all of the models. Each set of variables is considered below.

First, two variables related to school characteristics had a significant association with special education referrals across all of the models. Having high average ISTEP+ reading scores the prior year was negatively associated with referrals, indicating that schools with higher test scores had lower referral rates, controlling for other school characteristics. Further, the percentage of students on free and reduced lunch was positively associated with special education referrals, indicating a relationship between poverty and special learning needs. None of the other school characteristics was significantly associated with referral.

Second, four of the intervention types had consistently significant associations with referral rates. Schools with Success for All, Literacy Collaborative, and First Steps were negatively associated with special education referral rates. Controlling for other variables in the model, these interventions help more students stay in the educational mainstream. In contrast, Four Blocks was significant and positively associated with referral rates.

Third, none of the professional development variables were significant in any of the analyses of special education referrals. This indicates that professional development for reading was not associated with referral rates.

Fourth, one of the parent involvement variables, family literacy, was modestly significant (.10 alpha) in the final step, but was not statistically significant when the

instructional factors were taken into account. Controlling for all variables in the model, family literacy was associated with lower referral rates. This indicates that family literacy programs help families and schools to work together in a complementary way to keep more children in school.

Fifth, two of the factors related to classroom practices were significant. Connected-Text Approaches and Ability Grouping/Pullout Approaches were significant and positively associated with special education referral. Schools that emphasized these practices had higher referral rates, controlling for other variables in the model.

Retention Rates

The analyses of retention rates reveal a complex pattern of relationships between independent variables, as well as a number of direct relationships between predictor variables and retention rates (Table 3). Each set of variables is examined below.

First, five variables in the first model were significant in at least one version of the model. Two of the variables—the percentages of students getting free lunch and of minority students—were significant and positively associated with retention across all of the models. Schools with more low-income and minority students had more retention.

Two of the funding variables—receiving one year of funding and receiving two years of funding—were significant and negatively associated with retention in the first two steps of the analyses. Thus, controlling for other school characteristics, receiving one or two years of funding through EIGP was associated with keeping more students on grade level. Both variables were highly significant (.05) in the first step, modestly significant in the second step (.10) and not significant in any of the subsequent steps. The drop in the extent of significance across both steps indicates that the influence of funding is related to the variables in the each of these steps. The significance of the two funding variables was mitigated when the types of interventions were added in the second model. This is a logical finding given that the funding supported the programs that many schools implemented. Another portion of the significance of the funding variables was related to the professional development opportunities in the school. Specifically, when having an opportunity to collaborate was considered, the funding variables were no longer significant. This suggests that receiving EIGP funds enabled teachers to collaborate,

another desirable outcome of funding, at least according to the professional development hypothesis.

One variable, being in a rural locale, was modestly significant (.10) after the program types were added to the model. This suggests a confounding relationship between intervention types and the rural locale. Further analysis of the types of programs implemented in rural locales would be needed to discern why there was such a confounding relationship.

Second, two variables related to intervention types were significant in at least one step of the model. The Literacy Collaborative was modestly significant (.10) and negatively associated with retention in the first two versions of the analysis. There is a confounding relationship between the Literacy Collaborative and variables related to parent involvement. Since the Literacy Collaborative encourages family involvement in reading, this was not an unexpected finding.

Reading Recovery was also modestly significant (.10) after professional development variables were added to the model (steps 3, 4, and 5). Because Reading Recovery provides certified training and because schools with this program had certified specialists in the first grade, we expect the confounding relationship was attributable to these variables. Certified training and certified specialists were positive but not significant when they entered the model. The positive association in these variables offset the negative association of Reading Recovery in the last three steps.

Third, only one professional development variable was significant across all of the models. Having the opportunity to collaborate was negatively associated with retention, indicating that when teachers have the opportunity to collaborate it is easier for them to communicate about the types of educational programs that will enable more children to achieve on grade level.

Fourth, two variables related to parent involvement were significant. Paired reading between parents and children was associated with lower retention rates, while parent conferences were associated with higher retention rates. Paired reading is directly related to literacy instruction and is an integral feature of Literacy Collaborative, which could explain the association between this program type and professional development.

Finally, four of the factors were significant. Connected-Text Approaches and Trade Books were significant and negatively associated with retention rates, indicating these patterns of practice help more children perform on grade level. Direct/Explicit Approaches and Child-Centered/Expressive Approaches were significant and positively associated with retention rates, indicating these methods were associated with having fewer students perform on grade level.

Test Pass Rates

The analyses of the influence of predictor variables on pass rates for standardized tests (Table 4) also indicated a complex pattern of relationships between predictor variables. Three of the school characteristic variables had a consistent significant relationship with the outcome across each version of the model. Schools with higher average ISTEP+ scores during the base year had higher pass rates the next year. In contrast, the percentages of minority and low-income students were negatively associated with pass rates across all models.

In this analysis, having one year of funding was significant and negatively associated with pass rates in the first two models. This variable was only modestly associated with pass rates in the third model (.10), and was not significantly associated with the outcome in the last two models. Thus funding had a confounding relationship with both professional development (and especially the opportunity to collaborate) and parent involvement. This reveals the opposite pattern as the prior analysis. Whereas the combination of funding and the opportunity to collaborate seemed to help keep more children in the classroom, the similar combination of variables was associated with lower pass rates.

Three of the intervention types had significant associations with test pass rates. Success for All had a strong negative association with pass rates across all of the models. In contrast, both Literacy Collaborative and ASP had modest (.10) positive associations with higher pass rates after parent involvement was considered. Literacy Collaborative and Accelerated Schools Project place a substantial emphasis on parent involvement.

Opportunity to collaborate was significant and negatively associated with pass rates. In combination with the analysis of the retention rates above, these findings suggest

a complex pattern of confounding relationships between funding, professional development, and student outcome. To better understand these relationships, we reflect below on this evidence in relation to the reform hypotheses.

None of the factors related to classroom practices was significant. Prior analyses that had considered the type of program and type of program funding separately, revealed a positive relationship between Direct/Explicit Approaches and pass rates (St. John, Manset, Chung, Simmons, & Musoba, 2000; St. John, Manset, Chung, Simmons, Musoba, Manoil, & Worthington, in press). The present model provides a better way to control for the effects of funding and program type. Therefore, controlling for funding and program type, we conclude that none of the patterns of classroom practice were associated with pass rates independent of the effects of the types of programs implemented and the receipt of funding.

Evidence Related to Reform Hypotheses

Three rationales influenced the development and evolution of the Early Intervention Grant Program in Indiana. By considering the results above in relation to the three hypotheses, it is possible to untangle further how government-sponsored interventions influence learning outcomes.

Professional Development

The professional development hypothesis was that: *teachers need time for professional development that includes collaboration strategies for improving educational outcomes.* These analyses reveal a pattern of relationship between funding and the opportunity to collaborate. In two of the three analyses, the effects of receiving funding disappeared when the effects of the opportunity to collaborate were also considered. There are three distinct aspects of this pattern of findings that merit attention.

First, this pattern of findings seems consonant with the model of professional development (Bull & Buechler, 1996) that the state of Indiana has encouraged schools to emphasize in all categorical grant applications (St. John, Ward, & Laine, 1999). This finding indicates that the state's encouragement of professional development had an influence on the strategies schools used to involve teachers in their reform efforts.

Second, these two findings—that funding and the opportunity to collaborate were associated with less retention and higher test pass rates—indicate a relationship between keeping children in the mainstream and passing tests. Indeed, one way to improve pass rates is to increase retention. When teachers have time to collaborate, they exhibit an increased capacity to keep more students achieving at grade level. However, there is an implied tradeoff between two sorts of outcomes—keeping children on grade level and having higher pass rates.

Third, two years of funding with a comprehensive reform method overcame the implicit tradeoff. Having one year of funding and having two years of funding were associated with lower retention rates, while only having one year of funding was associated with having lower test pass rates. Two years of funding provided more time for teachers to work through the problems associated with creating learning environments that help more children to achieve on grade level. If schools had two years of funding before children entered the third grade, children benefited from the programs. Having supplemental programs in both first and second grades apparently made a difference for students. Since children took the ISTEP+ test at the start of third grade, the two years of funding would have been sufficient to affect the reading programs prior to taking these achievement tests.

Not only do these three interpretations seem to support the professional development hypothesis, but they also suggest the possibility of a deeper pattern. One line of argument about school reform is that restructuring processes that involve teachers and parents can create caring learning communities that engage more children in active learning (St. John, Griffith, & Allen-Haynes, 1997). Not only do the findings above indicate a relationship between funding and opportunity to collaborate among teachers, but parent involvement also seems to be an important relationship with respect to test passing rates (see Table 4). "People" variables have the most impact, indicating more attention should be given to creating caring communities that support the development of children in schools. This pattern of relationships among variables merits further consideration in future studies.

Comprehensive Reform

A second hypothesis was that: *comprehensive and cohesive reform approaches are essential to improving schools' outcomes.* This hypothesis is not only a long-standing assumption of reforms such as Reading Recovery (Clay, 1993), but it is also a counter-argument to newer claims about direct phonics instruction. The findings of this study reinforce the notion that comprehensive and cohesive approaches to reform can influence educational outcomes, but it also reveals that the effects of reform models are far from monolithic.

The effects of the distinctive reform models are summarized in Table 5, along with an interpretive comment related to these reforms. These analyses not only controlled for the effects of funding and school characteristics, but also considered confounding relationships with professional development, parent involvement, and patterns of classroom practice. Different reform models had different effects, reinforcing the notion that not only do different comprehensive reform models have different features but they also have different effects.

It is abundantly apparent that the reforms had different effects. One of the reform models, Literacy Collaborative, had the desired association with all three outcomes, indicating a comprehensive impact of student outcomes. Another model, Success for All, had a desired association with one outcome (special education referral) and an undesired association with another (achievement tests), suggesting a tradeoff implied in selecting this model. A third model, Four Blocks, had only one undesired association (related to higher special education referral). The other models noted in the table (Reading Recovery, full-day kindergarten, and Accelerated Schools) had one desired outcome.

It was also apparent that the effects seemed directly related to the design features in these models. For example, the finding that Reading Recovery was associated with higher retention rates seems directly related to the program's focus on raising the reading level for first grade children who are having trouble learning to read. Even the lower-than-expected findings associated with Four Blocks seem related to the lack of emphasis on professional development and parent involvement in this model. Professional development was integral to the state reform strategy and it had a direct effect on some outcomes, but Four Blocks *per se* was not positively associated with these outcomes.

Clearly schools should consider the design features of possible reform models when they are considering a reform strategy.

Direct Instruction

The third hypothesis was that: *direct instruction in letter/sound relationships (i.e., direct phonics instruction) can improve early reading acquisition.* The findings presented here do not support the direct instruction hypotheses. Earlier analyses, earlier studies that did not control for the years of funding, found that Direct/Explicit Approaches were associated with higher grade level retention rates and with higher passing rates on standardized tests (Manset, St. John, Hu, & Gordon, in press; St. John, Manset, Chung, Simmons, & Musoba, 2000). These earlier studies did not examine the effects of funding and the types of reforms adopted, but rather used treatment variables that combined funding and reform type. Thus, the current study has better logical and statistical controls for the effects of funding than the earlier studies, which probably explains the difference in findings (given that the funding variable has the reverse effect noted in these earlier studies). Thus we conclude that the earlier finding—that Direct/Explicit Approaches was associated with higher pass rates on standardized tests and lower retention—was an artifact attributable to the first year effects of funding (i.e., the first year of new practices). However, regardless of which set of findings one accepts, there is not strong support for the direct instruction hypothesis.

The partial correlations between the program types of the factors provide more explanations for these findings (see Table 6). These analyses reveal that most of the comprehensive reform models we examined were correlated with factors other than Direct/Explicit Approaches. These models emphasize literature-rich instruction and de-emphasize direct phonics instruction, worksheets, and basal readers. None of the reform models was significant and positively correlated with the Direct/Explicit Approaches factor. In fact, schools with four of the reform models—Reading Recovery, Success for All, Literacy Collaborative, and Four Blocks—were actually negatively associated with the Direct/Explicit Approaches factor.

This supports the notion that a balanced approach to reading instruction may be needed. Apparently there really is a difference between the reforms, such as Success for

All, that were endorsed by the National Research Council (Snow, Burns, & Griffith, 1998) and direct approaches to reading intervention that are now so widely advocated. Success for All had a negative correlation with the Direct/Explicit Approaches factor, which includes more emphasis on phonics and related practices. Similarly, several of the other reform models had similar patterns of practice as Success for All. Indeed, schools with Success for All—along with schools with Reading Recovery, Literacy Collaborative and other locally developed programs—were associated with Connected-Text Approaches and Ability-Group/Pullout Approaches (Table 6). Thus, a comprehensive approach may provide a literature-rich environment and supplemental support for children who are having trouble learning to read.

In the summer of 2000, the IDOE sponsored statewide training on a "phonics toolkit" and development of web-based continuing education in methods for promoting phonemic awareness as a part of classroom instruction. Perhaps these workshops will introduce new methods in direct instruction that will have the desired influence on student outcomes. This development certainly merits further study.

Thus, it may be too early to assess adequately whether the direct instruction hypothesis holds up to empirical evidence. In Indiana, at least, research to date does not support the direct-instruction hypothesis. Therefore, we think further analyses are needed to test more fully whether these reform claims hold up when reforms are implemented that emphasize phonics and other direct approaches to early reading instruction.

Conclusions and Implications

The primary conclusion from this study is that the implicit hypotheses—or reform beliefs—advocates hold often oversimplify the complexity of reforming reading programs in ways that improve student outcomes. While the idea that a research base can inform policy is compelling, adhering to a political claim based on research that is conducted by reform advocates may be shortsighted. Policymakers and educators should be more skeptical about the claims made by researcher/reformers, including those who extrapolate about the value of direct phonics instruction from related research. While there is some compelling evidence to support the core aspects of the claims examined here, each set of claims was more complex than portrayed by the reform advocates. Thus,

while the new wave of research-based reading reforms holds promise, it is far from a panacea for educators.

This study indicates it is important to consider the role of the various rationales (or policy arguments) that influence the evolution of a grant program when evaluating the effects of the program. In particular, we found that the state's emphasis on embedding professional development in all grant proposals explained some of the direct effects of funding, after the types of interventions were controlled. This finding reveals that placing an explicit emphasis on professional development in the funding process can have a positive impact on students if the intervention is sustained for at least two years. While specific comprehensive reform models also had effects, different models had different effects. This means that schools should choose program types that meet their needs; that is, address deficiencies in their existing programs. Thus, the general rationale that comprehensive reforms improve student outcomes seems to overgeneralize a complex set of relationships between reforms and student outcomes. Further, there is reason to raise questions about the practical meaning of the direct instruction rationale. Specifically, it is difficult to discern how these practices actually influence student outcomes in schools, given that many schools already use these practices.

These findings have three important implications. First, it is crucial that policymakers include comprehensive evaluation studies when they undertake major new reforms. Too often state education reforms do not include evaluations. Nor do evaluations routinely test the assumptions made by reform advocates. Policymakers need to ponder the possibility of the null hypothesis. Indeed, the results of this study suggest that reform strategies that allow educators to select intervention designs that meet their educational needs may have a greater impact than mandating single reform models. For example, the national implementation of the Comprehensive School Reform Demonstration has enabled many schools to choose from among possible reform models. This approach, which is similar to the approach used by the state program examined in this report, seems a more reasonable approach than advocating a specific reform method in the legislation for education reform.

Second, it is crucial that evaluators think critically about the claims made by various educational reformers. These claims should be evaluated and openly discussed.

The rationales used by reformers are generally based on research that tests a single claim. Since the funding programs respond to a range of policy arguments in their design and evolution, it is important that researchers examine the impact of the specific activities that are required by a funding agency in order to secure funds. It also is necessary to control for the contexts in which reforms are implemented, as well as for classroom practices in comparison schools. In this study, we were careful to discern the features of various reform models and to ask educators about whether those features were frequently used in their schools. This enabled us to assess the impact of patterns of classroom practices on educational outcomes and to control for these patterns when we assessed the impact of reform models. When we took this step, it became apparent that different reform models had different effects. Further, we found that the designs themselves helped to explain the impact of the reform models.

Third, it is important that educators take the opportunity to think critically about the features of various reform models and the ways these features link to educational outcomes and the ways the reform models would change their education practices. To do this, they need to be able to assess their current practices, to consider the features of current reading programs, and to compare these practices to the features of various reforms. Some work has been done in producing guides that can help educators assess current practices (e.g., North Central Regional Education Laboratory, 2000; St. John & Bardzell, 1999), but more work is needed. Given that the new wave of research-based reading reforms is creating opportunities for educators to make informed choices about improvement strategies, a better effort should be made to disseminate useful information into the hands of educators who are making choices about reform strategies.

TABLE 1
Descriptive Statistics of the Sample

	Mean (%)[5]	S.D.
Outcome Variables		
Special education grade 1-3	.05	.03
Grade retention grade 1-3	.02	.02
% Passing ISTEP English/Language Arts Scale Score	.69	.13
School Characteristics		
ISTEP Reading Raw Score	34.44	2.38
% Free or Reduced Lunch	.26	.18
% Minority	.13	.20
City[6]	18.5%	
Rural[2]	31.9%	
ELIGP Funding Status		
One-year Funding	32.0%	
Two-year Funding	11.3%	
Three-year Funding	1.3%	
Intervention Type[7]		
RR	40.8%	
Success for All	1.5%	
Literacy Collaborative	3.2%	
Full-Day Kindergarten	12.3%	
First Steps	3.0%	
Even Start	0.9%	
Accelerated Schools	0.7%	
Four Blocks	12.5%	
Professional Development		
Certified Training	32.7%	
Certified Specialist Grade	34.4%	
In-service Workshops	77.0%	
Networking	66.1%	
Opportunity for Collaboration	73.5%	
Parent Involvement		
Book Distribution	50.9%	
Family Literacy	30.5%	
Paired Reading (Parent-to-Child)	76.2%	
Parent Conferences	97.3%	
Parent Volunteers	64.2%	

Note: n=823; double weight was given to comparison schools.

[5] Percentages only are reported for dichotomous variables. Averages and standard deviations are reported when percentages are used as continuous variables.
[6] Schools in town and suburban locales are the reference group.
[7] Schools having no or other interventions were the reference group.

TABLE 2
Standardized Coefficients of Predictors on Special Education Referral Rate

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
SCHOOL CHARACTERISTICS										
One-year Funding Index	-0.024		-0.024		-0.027		-0.027		-0.032	
Two-year Funding Index	-0.024		-0.035		-0.036		-0.032		-0.042	
Three-year Funding Index	-0.002		-0.010		-0.011		-0.008		-0.014	
ISTEP Reading Total Raw Score	-0.123	***	-0.129	***	-0.127	***	-0.133	***	-0.125	***
% Getting Free Lunch	0.189	***	0.181	***	0.183	***	0.191	***	0.186	***
% Minority	-0.065		-0.044		-0.047		-0.052		-0.043	
City	-0.024		-0.029		-0.030		-0.031		-0.031	
Rural	0.019		0.033		0.032		0.034		0.027	
INTERVENTION TYPE										
Reading Recovery			0.028		0.018		0.019		0.017	
Success for All			-0.064	*	-0.065	*	-0.068	*	-0.075	**
Literacy Collaborative			-0.081	**	-0.078	**	-0.078	**	-0.092	**
Full-Day Kindergarten			0.050		0.046		0.045		0.043	
First Steps			-0.081	**	-0.078	**	-0.078	**	-0.087	**
Even Start			-0.022		-0.019		-0.024		-0.029	
Accelerated Schools			0.009		0.006		0.004		0.007	
Four Blocks			0.080	**	0.084	**	0.085	**	0.072	*
PROFESSIONAL DEVELOPMENT										
Certified Training					0.046		0.050		0.041	
Certified Specialist Grade					0.035		0.037		0.023	
In-service Workshops					-0.005		-0.003		-0.012	
Networking					-0.033		-0.029		-0.028	
Opportunity for Collaboration					-0.009		-0.006		-0.019	
PARENT INVOLVEMENT										
Book Distribution							-0.027		-0.032	
Family Literacy							-0.052		-0.065	*
Paired Reading							-0.008		-0.015	
Parent Conferences							0.009		0.006	
Parent Volunteers							0.029		0.022	
CLASSROOM PRACTICES										
Connected-Text									0.065	*
Direct/Explicit									-0.051	
Child-Centered/Expressive									0.023	
Ability Group/Pullout									0.076	**
Trade Books									0.036	
Adjusted R Squared	0.043		0.062		0.060		0.058		0.064	

Note: n=823; * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$.

TABLE 3
Standardized Coefficients of Predictors on Retention Rate

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
SCHOOL CHARACTERISTICS										
One-year Funding Index	-0.103	***	-0.069	*	-0.057		-0.051		-0.034	
Two-year Funding Index	-0.103	***	-0.067	*	-0.057		-0.053		-0.034	
Three-year Funding Index	-0.048		-0.024		-0.015		-0.013		-0.005	
ISTEP Reading Total Raw Score	0.036		0.017		0.015		0.028		-0.002	
% Getting Free Lunch	0.204	***	0.203	***	0.206	***	0.188	***	0.173	***
% Minority	0.221	***	0.227	***	0.236	***	0.239	***	0.222	***
City	-0.046		-0.044		-0.050		-0.050		-0.045	
Rural	0.058		0.062	*	0.069	*	0.064	*	0.067	*
INTERVENTION TYPE										
Reading Recovery			-0.055		-0.067	*	-0.078	*	-0.069	*
Success for All			-0.045		-0.046		-0.052		-0.053	
Literacy Collaborative			-0.064	*	-0.064	*	-0.056		-0.049	
Full-Day Kindergarten			-0.018		-0.021		-0.014		-0.024	
First Steps			-0.010		-0.008		0.000		-0.004	
Even Start			-0.008		-0.005		-0.006		-0.006	
Accelerated Schools			0.019		0.020		0.032		0.032	
Four Blocks			-0.029		-0.023		-0.021		0.011	
PROFESSIONAL DEVELOPMENT										
Certified Training					0.010		0.006		0.007	
Certified Specialist Grade					0.006		0.006		0.009	
In-service Workshops					0.054		0.042		0.049	
Networking					-0.005		-0.004		-0.014	
Opportunity for Collaboration					-0.113	***	-0.111	***	-0.108	***
PARENT INVOLVEMENT										
Book Distribution							-0.014		-0.005	
Family Literacy							0.028		0.027	
Paired Reading							-0.094	***	-0.085	**
Parent Conferences							0.089	**	0.091	**
Parent Volunteers							-0.040		-0.053	
CLASSROOM PRACTICES										
Connected-Text									-0.082	**
Direct/Explicit									0.079	**
Child-Centered/Expressive									0.111	***
Ability Group/Pullout									0.001	
Trade Books									-0.062	*
Adjusted R Squared	0.109		0.111		0.118		0.126		0.145	

Note: n=823; * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$.

TABLE 4
Standardized Coefficients of Predictors on Passing Rate in ISTEP+ English/Language Arts Scale Score

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
SCHOOL CHARACTERISTICS										
One-year Funding Index	-0.091	***	-0.072	**	-0.064	*	-0.049		-0.045	
Two-year Funding Index	-0.015		-0.020		-0.017		-0.014		-0.011	
Three-year Funding Index										
ISTEP Reading Total Raw Score	0.523	***	0.515	***	0.521	***	0.528	***	0.522	***
% Getting Free Lunch	-0.198	***	-0.203	***	-0.198	***	-0.208	***	-0.228	***
% Minority	-0.148	***	-0.158	***	-0.154	***	-0.158	***	-0.146	***
City	0.009		0.007		0.007		0.010		0.010	
Rural	-0.021		-0.028		-0.020		-0.021		-0.018	
INTERVENTION TYPE										
Reading Recovery			-0.034		-0.040		-0.046		-0.042	
Success for All			-0.087	***	-0.086	***	-0.089	***	-0.089	***
Literacy Collaborative			0.046		0.047		0.054	*	0.055	*
Full-Day Kindergarten			0.021		0.016		0.016		0.019	
First Steps			0.022		0.019		0.015		0.010	
Even Start			0.024		0.028		0.033		0.033	
Accelerated Schools			0.043		0.043		0.052	*	0.051	*
Four Blocks			0.010		0.015		0.024		0.027	
PROFESSIONAL DEVELOPMENT										
Certified Training					0.004		-0.002		0.002	
Certified Specialist Grade					0.009		0.011		0.012	
In-service Workshops					0.042		0.040		0.040	
Networking					-0.022		-0.021		-0.028	
Opportunity for Collaboration					-0.076	**	-0.079	**	-0.073	**
PARENT INVOLVEMENT										
Book Distribution							0.060	*	0.058	*
Family Literacy							-0.031		-0.031	
Paired Reading							-0.048		-0.053	*
Parent Conferences							0.006		0.005	
Parent Volunteers							-0.019		-0.019	
CLASSROOM PRACTICES										
Connected-Text									0.034	
Direct/Explicit									0.051	
Child-Centered/Expressive									-0.017	
Ability Group/Pullout									-0.023	
Trade Books									-0.021	
Adjusted R Squared	0.556		0.561		0.564		0.565		0.566	

Note: n=535; * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$.

Table 5:
Summary Analyses of the Effects of Reform Models: Significant Associations from Regression Analyses, with Possible Explanations (Considering Confounding Relationships and Design Features)

Program	Effect	Possible Explanations
Reading Recovery	Associated with lower grade-level retention rates.	1) Finding related to the impact of professional development (e.g., certified training and specialist). 2) Finding consonant with the design intent, which is to enable more children to achieve on grade level.
Success for All	Associated with lower rates of special education referral.	This finding is consonant with the program design, which encourages mainstreaming more children.
	Associated with lower pass rates on standardized tests for reading and language arts.	1) Could be attributable to the mainstreaming of more children. 2) Long-term implementation may be needed to achievement improvement on standardized tests.
Literacy Collaborative	Associated with lower special education referral rates.	Consonant with the program design, which intends to involve parents and children in paired reading.
	Associated with lower grade-level retention rates.	1) Finding related to the direct effects of professional development. 2) Provides a cohesive design that is linked to the professional development processes provided through Reading Recovery.
	Associated with higher pass rates on standardized tests for reading and language arts.	1) Finding related to the direct effects of parent involvement (i.e., book distribution). 2) Indicates a cohesive design, which builds on the strengths of schools and families.

First Steps	Associated with lower special education referral.	Consonant with the design concept, which emphasizes systematically tracking the progress of children and intervening to promote learning outcomes.
Full-Day Kindergarten	Associated with lower special education referral.	1) Finding related to parent involvement (e.g., paired reading [parent-child]). 2) Consonant with the more comprehensive approach to FDK emphasized in the funding program.
Accelerated Schools Project	Associated with higher pass rates on standardized tests for reading and language arts.	1) Finding related to parent involvement. 2) Consonant with program design, which emphasizes involvement in school governance and in educational practices. 3) Consonant with program intent of accelerating the learning of children in situations that put them at risk.
Four Blocks	Associated with higher special education referral rates.	1) Model design lacks a consistent emphasis on parent involvement and ongoing professional development. 2) Other explanations for this problematic finding are not readily evident.

Table 6
Relationship Between Reading Reforms and Frequency of Patterns of Practice Reported by Schools

Program	Text-Connected Approaches	Direct/ Explicit Approaches	Child-Centered/ Expressive Approaches	Ability-Group/ Pullout Approaches	Trade Book Approaches
Reading Recovery	+	—		+	
Success For All	+	—		+	—
Literacy Collaborative	+	—	+	+	
First Steps					
Accelerated Schools					
Four Blocks	+	—		—	+
Early Success					
Other Locally Developed Programs	+		+	+	
No Program	—			—	

\+ Significant and positive Pearson correlation
— Significant and negative Pearson correlation

References

Allington, R. L., & Woodside-Jiron, H. (1999). The politics of literacy teaching: How 'research' shaped policy. *Educational Researcher, 28* (8), 4-12.

Australian Council for Education Research. (1993a). *The impact of First Steps on the reading and writing ability of western Australian year 5 school students*. An Interim Report to the Curriculum Development Branch Western Australia Ministry of Education.

Australian Council for Education Research. (1993b). *The impact of First Steps on schools and teachers*. An Interim Report to the Curriculum Development Branch Western Australia Ministry of Education.

Bull, B., & Buechler, M. (1996). *Learning together: Professional development for better schools.* Bloomington, IN: Indiana Education Policy Center.

Bull, B., Buechler, M., Didley, S., & Krehbiel, L. (1994). *Professional development and teacher time: Principles, guidelines, and policy options for Indiana.* Bloomington, IN: Indiana Education Policy Center.

Center, Y., Wheldall, K., Freeman, L., Outhred, L., & McNaught, N. (1995). An evaluation of Reading Recovery. *Reading Research Quarterly, 30,* 240-263.

Chall, J. S. (1967). *Learning to read: The great debate*. New York: McGraw Hill.

Clay, M. M. (1993). *Reading Recovery: A guidebook for teachers in training.* Portsmouth, NH: Heinemann.

Connor-Tadros, L. (1996). *Effects of Even Start on family literacy: Local and national comparisons.* Baltimore, MD: Johns Hopkins University.

Cunningham, P. (1991). Research directions: Multi-method, multilevel, literacy instruction in first grade. *Language Arts, 68,* 578-584.

Cunningham, P. M., Hall, D. R., & Defee, M. (1991). Non-ability grouped, multilevel instruction: A year in a first grade classroom. *The Reading Teacher, 48,* 566-571.

Cunningham, P. M., Hall, D. R., & Defee, M. (1998). Non-ability grouped, multilevel instruction: Eight years later. *The Reading Teacher, 51* (8), 652-664.

Dianda, M. & Flaherty, J. (1995). *Annual report on promising practices and program adaptations successes.* Los Alamitos, CA: Southwest Regional Educational Laboratory.

Deschamp, P. (1995). Case studies of the implementation of the First Steps project in twelve schools. Western Australia, Education Department. (ERIC Document Reproduction Service No. ED 419 425).

Education Commission of the States. (1997). *Investing in teacher professional development: A look at 16 school districts.* Denver: Putnam.

Elicker, J., & Mathur, S. (1997). What do they do all day? A comprehensive evaluation of a full-day kindergarten. *Early Childhood Research Quarterly, 12*, 459-480.

Finnan, C., St. John, E. P., Slovacek, S. P., & McCarthy, J. (Eds.). (1996). *Accelerated Schools in action: Lessons from the field.* Thousand Oaks, CA: Corwin Press.

Foorman, B. R., Fletcher, J. M., Francis, D. J., & Schatschneider, C. (2000). Response: Misrepresentation of research by other researchers. *Educational Researcher, 29* (6), 27-37.

Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology, 90* (1), 37-55.

Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J. M. (1996). Developmental lag versus deficit models of reading disability: A longitudinal, individual growth cures analysis. *Journal of Educational Psychology, 88,* 37-55.

Gamse, B. C., Conger, D., Elson, D., & McCarthy, M. (1997). Follow-up study of families in the Even Start in-depth study: Final report. Cambridge, MA: Abt Associates, Inc. (ERIC Document Reproduction Service No. 413 099).

Gordon, W. E. (1999). *Education and justice: View from the back of the bus.* Albany: State University of New York Press.

Guskey, T. R., & Sparks, D. (1997). Exploring the relationship between staff development and improvement in learning. *Journal for Staff Development, 17* (40), 34-38.

Humphrey, J. W. (1988). *A longitudinal study of the consequences of full-day kindergarten through grade eight.* Evansville, IN: Evansville-Vanderburgh School Corporation.

Iverson, S., & Tunmer, W. E. (1993). Phonological processing skills and the Reading Recovery program. *Journal of Educational Psychology, 85,* 112-126.

Knight, S. L., & Stallings, J. A. (1995). The implementation of the Accelerated School model in an urban elementary school. In R. L. Allington & S. A. Walmsley

(Eds.), *No quick fixes: Rethinking literacy programs in America's elementary schools* (pp. 236-251). New York: Teachers College Press.

Lyons, C. A. (1994). Reading Recovery and learning disability: Issues, challenges, and implications. *Literacy, Teaching, and Learning, 1* (1), 109-119.

Madden, N. A., Slavin, R. E., Karweit, N. L., Donlan, L., & Waskik, B. A. (1991). Success for All: Multi-year effects of a schoolwide elementary restructuring program, Report no. 18. Baltimore, MD: Center for Research on Effective Schools.

Madden, N. A., Slavin, R. E., Karweit, N. L., Livermon, B. J., & Donlan, L. (1989). Success for All: First-year effects of a comprehensive plan for reforming urban education. Report no. 30. Baltimore, MD: The Johns Hopkins University, Center for Research on Elementary and Middle Schools.

Manset, G., St. John, E. P., Hu, S., and Gordon, D. (in press). Early literacy practices as predictors of reading related outcomes: Test scores, test passing rates, retention, and special education referral. *Exceptionality.*

Mathes, P. B., & Torgesen, J. K. (2000). A call for equity in reading instruction for all students: A response to Allington and Woodside. *Educational Researcher, 29* (6), 4-14.

McCarthy, J., & Stills, S. (1993). Hollibrook Elementary School. In J. Murphy & A Hollinger (Eds.), *Learning from ongoing efforts* (pp. 63-83). Newberry Park, CA: Corwin.

Miron, L. F., & St. John, E. P. (Eds.). (in press). *Reinterpreting urban school reforms: A critical-empirical review.* Albany: State University of New York Press.

North Central Regional Educational Laboratory (NCREL). (2000). *Comprehensive school reform: Making good choices.* Oak Brook, IL: NCREL.

Ohio State University, Reading Recover Project. (1998). Literacy Collaborative. (Information packet on Literacy Collaborative provided by program directors). Columbus, OH: Authors.

Pinnell, G., Lyons, C. A., DeFord, D., Bryk, A., & Seltzer, M. (1994). Comparing instructional models for literacy education of high-risk first graders. *Reading Research Quarterly, 29* (1), 9-39.

Ross, R. M., & Smith, L. J. (1994). Effects of Success for All model on kindergarten through second grade reading achievement teachers; adjustment and classroom-school climate at an inner city school. *Elementary School Journal, 95,* 121-138.

Rowe, K. J. (1997). Factors affecting students' progress in reading: Key findings from a longitudinal study. In S. Swartz & A. Klein (Eds.), *Research in Reading Recovery* (pp. 53-101). Portsmouth, NH: Heinemann.

St. John, E. P., & Bardzell, J. S. (1999). *Improving early reading and literacy: A guide for developing research-based programs*. Bloomington, IN: Indiana Education Policy Center.

St. John, E. P., Bardzell, J., Michael, R., Hall, G., Manoil, K., Asker, E., & Clements, M. (1998). *Indiana's Early Literacy Intervention Grant Program implementation study*. Bloomington, IN: Indiana Education Policy Center.

St. John, E. P., Griffith, A. I., & Allen-Haynes, L. (1997). *Families in schools: A chorus of voices in restructuring*. Portsmouth, NH: Heinemann.

St. John, E. P., Manset, G., Chung, C. G., Simmons, A. B., & Musoba, G. D. (2000). *Research-based reading interventions: The impact of Indiana's Early Literacy Intervention Grant Program.* Policy Research Report #00-02. Bloomington, IN: Indiana Education Policy Center.

St. John, E. P., Manset, G., Chung, C. G., Simmons, A. B., Musoba, G. D., Manoil, K., & Worthington, K. (in press). Research-based reading reform: The impact of state-funded interventions on educational outcomes in urban elementary schools. In L. F. Miron & E. P. St. John (Eds.), *Reinterpreting urban school reform: A critical-empirical review*. Albany: State University of New York Press.

St. John, E. P., Manset, G., Hu, S., Simmons, A., & Michael, R. (2000). *Assessing the impact of reading interventions: Indiana's Early Literacy Intervention Grant Program*. Policy Research Report #00-01. Bloomington, IN: Indiana Education Policy Center.

St. John, E. P., Ward, J. S., & Lane, S. W. M. (1999). *State policy on professional development: Rethinking the linkages to standard outcomes*. Oak Brook, IL: North Central Regional Educational Laboratory.

Sheehan, R., Cryan, J. R., Wiechel, J., & Bandy, I. G. (1991). Factors contributing to success in elementary schools: Research findings for early childhood educators. *Journal of Research in Childhood Education, 6*, 66-75.

Slavin, R., (1991). *Education for all: Contexts of learning*. Lisse, Netherlands: Swets & Zeitlinger.

Slavin, R., Madden, N., Dolan, L., Wasik, B., Ross, S., & Smith, L. (1994). Whenever and wherever we choose: The replication of 'Success for All.' *Phi Delta Kappan, 75* (8), 639-647.

Snow, C., Burns, M., & Griffin, P. (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy Press.

Taylor, B. M., Anderson, R. C., Au, K. H., & Taffy, E. R. (2000). Discretion in translation of research to policy: A case from beginning reading. *Educational Researcher, 29* (6), 16-26.

Wong, K. K. (in press). Federal Title I as a reform strategy in urban schools. In L. F. Miron & E. P. St. John (Eds.), *Reinterpreting urban school reform: A critical-empirical review.* Albany: State University of New York Press.